CLAIMS

(Claims as filed during PCT application)

1. A device (1) for determining the angular position over 360° and rotation speed of a rotary member (12), driven by a rotation movement (32) about a rotation direction, said device comprising:

- a sensor (2) consisting of a fixed part (6) and a rotary part (8) linked to the rotary member (12), said rotary part bearing a magnetic flux generator (14) and said fixed part comprising:
  - a first probe (22) generating a binary electrical signal (V_{22}) having two different levels as a function of the angular position of the rotary member, each level corresponding to a range of angular positions of the rotary member covering a segment of revolution, said levels being separated from each other by a discontinuity (D),
  - a second probe (26) angularly offset in relation to the first probe (22) and generating an electrical signal (Vf) as a univalent function of the angular position of the rotary member for each of the segments of revolution corresponding to a level of the electrical signal generated by the first probe,
- analysis means (4) comprising first means (36, 38, 46) univalently defining over 360° the angular position of the rotary member,

characterized in that:

- the sensor (2) also comprises a summing assembly (28) having an output (50) at which is generated an output signal (Vs), said assembly summing the electrical signal (V_{22}) generated by the first probe (22) and the electrical signal (Vf) generated by the second probe (26), such that the output signal (Vs) comprises discontinuities (d) corresponding to the discontinuities (D) of the electrical signal generated by the first

probe (22),

- the analysis means (4) are linked to the output (50) of the sensor (2); they also include second means (36, 40, 42, 44) calculating the rotation speed of the rotary member.

2. The device as claimed in claim 1, characterized in that the second means (36, 40, 42, 44) calculate the rotation speed of the rotary member as a function of the number of discontinuities (d) of the output signal (Vs), per unit of time.

3. The device as claimed in claim 1 or claim 2, characterized in that the variation (Vv) of the output signal (Vs) between two discontinuities (d) is less than the value (Vd) of the discontinuities (d) of the output signal (Vs).

4. The device as claimed in any one of the preceding claims, characterized in that the analysis means (4) comprise a microcontroller (36) having an analog input (38) belonging to the first means (36, 38, 46) and a digital input (40) belonging to the second means (36, 40, 42, 44).

5. The device as claimed in claim 4, characterized in that the second means (36, 40, 42, 44) also comprise a high-pass filter (42) upstream of the digital input (40) of the microcontroller and the first means (36, 38, 46) comprise a by-pass (46) upstream of the high-pass filter (42) feeding the analog input (38).

6. The device as claimed in any one of the preceding claims, characterized in that the rotary part (8) comprises a magnet (14) generating said magnetic flux, the direction of magnetization of which is perpendicular to the rotation axis of the rotary part (12) and the fixed part (6) is positioned

around the magnet (14) and delimits two air gaps (18, 20) offset by roughly 90°, in which are placed the first (22) and second (26) probes.

7. The device as claimed in any one of the preceding claims, characterized in that the variation of the electrical signal (Vf) generated by the second probe (26) as a function of the angular position of the rotary member (12) is inverted for the angular positions of the rotary member corresponding to a discontinuity (D) of the electrical signal (V_{22}) generated by the first probe (22).

8. The device as claimed in any one of the preceding claims, characterized in that the first (22) and the second (26) probes are Hall-effect probes.

9. The device as claimed in claim 8, characterized in that the first probe (22) is a Hall-effect Switch probe of flip-flop type generating a binary electrical signal (V_{22}).

10. The device as claimed in claim 9, characterized in that the output (24) of the first probe (22) is linked to a voltage power source (Vcc), and the output of the first probe (22) and the output of the second probe (26) are linked to an assembly (28) summing the electrical signal (V_{22}) generated by the first probe (22) and the electrical signal (Vf) generated by the second probe (26).